Reply

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The authors wish to thank Merkulovich and Stepanov (1987) for the lively comment on our paper, "A Numerical Evaluation of the Stochastic Completeness of the Kinetic Coagulation Equation" (1984). Unfortunately, this comment is based on a misreading of our paper. As we frequently pointed out, our use of $P(n, i; t)$ differs from Gillespie's (1972) use in that we define it as the probability that n particles of size i will exist at time t in a unit volume (not in volume V as used by Gillespie). Thus, the contention that our results are erroneous is quite incorrect.

The argument that our results should only be valid when N, the total number of particles, is infinite in an infinite volume is also not correct. Whereas our Eq. (1) is only valid for an infinitely large number of particles in an infinite volume, Eq. (2), as Gillespie showed, requires no such stricture. The results of a Monte Carlo solution of (2) for a finite number of particles are perfectly valid. (Admittedly, the number of realizations in our ensemble averages may be somewhat less than ideal, but the results are valid enough to make the point.) The fact is that the solution of (1) for a finite total number of particles is not valid, as Merkulovich and Stepanov correctly point out. We believed this to be the point of our paper. They are, however, strictly correct in their statement concerning the first moment of $P(n, i; t)$ only being equal to $\bar{n}(i, t)$ for infinite numbers of particles in an infinite volume. This was careless usage by the authors and probably did little to alleviate the confusion.

Finally, Merkulovich and Stepanov's contention that the paper does not handle sedimentation properly is completely incorrect. Particle settling in the calculations is handled in exactly the way they propose, as we thought we made evident in section 2 of our paper.

REFERENCES

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